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DEPARTMENT OF PLANNING and
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To: Adam Chapdelaine, Town Manager

From: Daniel Amstutz, Senior Transportation Planner

CC: Jennifer Raitt, Director, Department of Planning and Community Development
Christopher Tonkin, Chair, Arlington Bicycle Advisory Committee

Date: February 18, 2020

RE: Proposed Speed Limit for the Minuteman Bikeway

On October 10, 2019, the Lexington Bicycle Advisory Committee (LBAC) requested the Town of Arlington to consider installing non-regulatory speed limit signs on the Minuteman Bikeway. LBAC brought the issue of speed limits on the Minuteman Bikeway to the Lexington Select Board on October 7, 2019. LBAC recommended the installation of a non-regulatory speed limit for the Bikeway at 15 miles per hour. The Lexington Select Board was generally supportive of the request and asked for potential signage designs to consider. The signage would be primarily directed at people bicycling, but presumably would apply to all users of the Bikeway. LBAC and the Town of Lexington want to have a Bikeway speed limit that is the same across the three Bikeway towns, and so has requested consideration from the Towns of Arlington and Bedford as well.

The Department of Planning and Community Development (DPCD) has researched this issue and communicated with members of each town's Bicycle Advisory Committee as well as staff from the Towns of Bedford and Lexington. Discussion of the proposal background, trail speed limit research, and a review of the pros and cons of this proposal are found below, along with a staff recommendation on the course of action for the Town of Arlington.

Background on Proposed Speed Limit for the Minuteman Bikeway

As the Minuteman Bikeway continues to grow in popularity, issues of user conflict and safety between different user types are frequently raised to each of the three towns along its 10-mile stretch. Most conflicts appear to be between pedestrians and people bicycling, especially in terms of the speed by which bicyclists travel compared to pedestrians. Often there are concerns about bicyclists passing pedestrians too quickly or too close, or getting frustrated at being unable to pass pedestrians or other cyclists so they can move faster down the path. These incidents make lower-speed users feel unsafe and uncomfortable on the Bikeway, because they fear they will be struck and injured by a fast-moving and careless bicyclist. Safety concerns have intensified since the fatal crash that occurred on the Bikeway in Lexington in March 2019, when two cyclists collided with each other and one was killed. This

is the first known incident of a fatality occurring on the Bikeway due to a collision between two travelers.

Concerns over the use of electric bicycles (e-bikes) on the Bikeway have also been cited, which stem partly from uncertainty about where they fit under state law (if they are considered motorized vehicles, they are not allowed on the Bikeway) and partly because e-bikes and e-assist bikes allow casual users to travel at higher speeds more easily. Although speeds of 20 mph or more are certainly possible on human-powered bicycles on the Bikeway, especially on sections with downhill grades, e-bikes have the potential to make it much easier for the general bicycling population to move at a faster pace.

Over the past year, the Bicycle Advisory Committees of Arlington, Bedford, and Lexington have been discussing how to address speeding concerns and conflicts between users on the Bikeway. This was a main topic of discussion at the Tri-Town Bike Committee Meeting on June 15, 2019. LBAC put forward a proposal to put non-regulatory speed limits on the Minuteman Bikeway because the higher speeds of some bicyclists are making lower-speed users uncomfortable and creating hazardous conditions for all users of the Bikeway.

The reason the speed limit would be “non-regulatory” is because the Lexington Police Department (and the Arlington Police Department) does not consider the Bikeway a “public way” under state law, making a speed limit unenforceable. However, LBAC argues that even a non-regulatory “recommended” speed limit would send a message to Bikeway users that lower speeds should be observed for all users. In email correspondence to Town staff, the previous Chair of LBAC has noted that “the 15mph posting isn’t so much about setting a speed limit but about sending a message that slower speeds... are recommended for a bikeway that is really a mixed use path with all sorts of users competing for space.” Other safety/courtesy messages would be included with the speed limit sign.

In the conversations between the three BACs, there is consensus that if a speed limit is implemented, it should be implemented along the entire length of the Bikeway and be agreed upon by the three towns. LBAC asked for a vote of the Bedford and Arlington BACs to support the creation of a non-regulatory speed limit. At its June 19, 2019 meeting, ABAC members voted to agree with the Lexington recommendation to install 15 mph advisory signage on the Minuteman Bikeway. However, the ABAC vote was not unanimous, and hinged upon the fact that the limit would be unenforceable. ABAC members also discussed that limiting speeds is less reasonable or practical during morning commute times, for example, when there are fewer pedestrians overall on the Bikeway to contend with.

In October 2019 the Bedford Bicycle Advisory Committee discussed the recommendations about speed guidelines and trail etiquette. It is unclear if they voted specifically to support a speed limit; nevertheless, they continue to support consensus with Lexington and Arlington on this issue.

As noted above, LBAC brought this issue before their Select Board in October 2019. Although LBAC stressed that they received considerable input from all types of Bikeway users, and an online news article by Wicked Local Lexington in September spurred feedback, public

feedback on the subject during the Lexington Select Board meeting was not supportive. Five members of the public spoke out against the proposal during the meeting, and written correspondence was also negative. However, when the members of the public – bicycle commuters in particular – learned that the limit would be advisory, they became more supportive of the proposal. The Select Board did not immediately endorse the speed limit and requested that LBAC bring back more information and a sign proposal.

The Town of Bedford's Board of Selectmen has not taken up the issue as of yet. Communication with staff at the Town of Bedford has revealed that the Bedford Police Department is concerned about the ability to enforce a speed limit on the Minuteman Bikeway, similar to the Arlington and Lexington police departments.

Average Bicycle Speeds and Speed Limits on Trails or Bikeways - National Perspective

There is no national database of trails or off-road bikeways that have speed limits, and neither is there one for Massachusetts. Whether or not trails have speed limits tends to range considerably across the nation. Research by town staff found trail speed limits in California, Washington State, and Minnesota, as well as Pennsylvania, which range from 10-15 mph (for example, the speed limit on the Great Allegheny Passage is 15 mph). In other states trail speed limits are unused on even some of the most major trails, such as the American Tobacco Trail in North Carolina and the Swamp Rabbit Trail in South Carolina. Similar to the Minuteman Bikeway, these two trails were converted from abandoned rail beds and traverse diverse communities of urban, suburban, and rural character. Many sections of these trails are long, straight, and flat, allowing for bicyclists to pick up speed. The Great Allegheny Passage is also built upon abandoned railways through Pennsylvania and Maryland as it travels between Pittsburgh and Washington, D.C. A significant difference is that these trails may be more recreational in nature, while the Minuteman has a demonstrable bicycle commuting usage pattern.

National guidance tends to gravitate towards 15 mph as a rule-of-thumb for trails. The Rails to Trails Conservancy advises users to "use safe speeds on the trail" but also notes that "the most standard speed limit on trails across the country is 15 miles per hour."¹ The Guide for the Development of Bicycle Facilities (2012), 4th Edition, published by the American Association of State Highway and Transportation Officials (AASHTO) provides guidance on the design speed of shared use paths. The Guide notes that the range of speeds on paths where bicycling is allowed are generally around 12 mph to 30 mph, and for paths in relatively flat areas with grades less than two percent, a design speed of 18 mph is generally sufficient. It is unclear if the Minuteman Bikeway was designed with a specific speed in mind, as the path follows a pre-determined route along the original rail corridor.

Average speeds of bicyclists are variable based on a number of factors, but some research and guidance provides useful information. A study from 2006 referenced on Livestrong.com found that people bicycling on newly-installed on-street bike lanes in Florida traveled at 11-12 mph on average.² As part of a 2016 study, Strava – a company with a mobile app that athletes

¹ <https://www.railstotrails.org/trailblog/2015/july/31/we-re-in-this-together-use-safe-speeds-on-the-trail/>

² <https://www.livestrong.com/article/413599-the-average-bike-riding-speed/>

use to track their progress – reported that bicyclists in the U.S. traveled at an average speed of 12 mph (females) to 15 mph (males).³ The AASHTO Guide for the Development of Bicycle Facilities (2012) notes that the average speed of a typical upright adult bicyclist on paved level terrain is between 8 and 15 mph.

Speed Limits on Trails or Bikeways – State and Local Context

The state Department of Conservation and Recreation (DCR) does not use speed limits on its trails because they are difficult to enforce and safe speed is context dependent, according to DCR staff. Travel behavior on their trails is regulated, however. 302 CMR Section 12.12: Rules of Conduct on DCR Properties – Non Motorized Vehicles; Trials, subsection (7) says: “No person shall operate any bicycle, in-line skates, scooters, skateboards or similar equipment in a reckless manner, or at a speed which may be considered unreasonable or improper for existing conditions.”⁴ Other regulations require staying to the right when traveling on trails and giving a clear signal when passing.

Town of Arlington staff also reached out to the Massachusetts Bicycle Coalition for their feedback on this issue. The opinion of Galen Mook, Executive Director of MassBike, is that 20 miles per hour is too fast for the Minuteman Bikeway, and that 15 mph is more appropriate.

The 15 mph speed limit on Shining Sea Bikeway (Falmouth, MA) has been cited by LBAC as the precedent they are using to argue for a speed limit on the Minuteman Bikeway. However, this speed limit is considered “completely ineffective” by Ed Gross, previous chair of Falmouth Bikeways Committee. In an email to Town staff, he noted that local police cannot monitor these low speeds so it is not enforced, and the original impetus to install speed limits on the Shining Sea Bikeway seemed to be spurious and lack data. Their speed limit may be regulatory since part of it is considered a “park road” but overall it is also not considered a public way.

Pros and Cons of Speed Limits on the Minuteman Bikeway

Through conversations and correspondence with local, state, and national organizations, research on speed limits in other states, and technical guidance, staff have put together a list of pros and cons for implementing a speed limit on the Minuteman Bikeway:

Pros

- **Speed limit signs can inform and encourage users to go slower on the Bikeway.**
Signs with a clear speed limit will communicate to Bikeway users what the recommended speed is and allow them to adjust their speed accordingly (if they know what speed they are going). It may also send a message that slower speeds are preferable on the Bikeway for all users.

³ <https://www.cyclingweekly.com/news/latest-news/british-cyclists-fastest-in-world-strava-303384>

⁴ <https://www.mass.gov/files/documents/2016/08/xn/3021200.pdf>

- **Clearly define what speeds are too high.**
A speed limit will define what is “too fast” for the Bikeway and allow users to adjust their speeds.
- **Potentially lower bicycle speeds and reduced conflicts with pedestrians.**
Lower bicycle speeds should reduce conflicts with other users by providing greater reaction time for all parties when a conflict arises. Lower speeds will also lead to less severe collisions when they do happen.
- **Most people biking will not have to change their behavior.**
Considering that the average speed of most cyclists tops out or is below 15 mph, most users will simply continue to ride as normal. It will be the higher-speed cyclists that will need to adjust their speeds, which is likely a lower number of overall users.
- **Inexpensive to install; no enforcement by police needed (since it’s not regulatory).**
Town staff, in coordination with ABAC, can determine the number of signs needed, their wording and design, and where they will be located. The cost will mainly be the design, fabrication, and installation of the signs, but since there cannot be an enforcement component there will not be costs associated with this.

Cons

- **A speed limit on the Minuteman Bikeway cannot be enforced.**
The Arlington Police Department does not consider the Bikeway a “public way” and do not believe they can legally enforce a speed limit. Even if a speed limit was enforceable, other hurdles would be putting together the staff time to conduct enforcement and having the requisite equipment to monitor cyclist speeds (or other low-speed vehicle users). There may also be a negative perception from the public by enforcing bicycle speeds when the vast majority of traffic crashes result from automobile collisions.
- **Most bicycles do not have speedometers, so most bicyclists won’t know how fast they are going (and whether or not it is over 15 mph).**
Although bicycle computers that can relay speed information to users are available at most bicycle stores, there is no requirement that bicycles have such equipment. Bicycles operate at low speeds already, and road speed limits are primarily meant for motor vehicles – as most people bicycling would barely be able to reach a 25 mph or 30 mph limit unless on a steep downhill slope. Thus it is unlikely that most bicycle users would be aware of their speed in order to moderate it appropriately. The same is true for pedestrians: a bicycle passing by a pedestrian can “feel” fast, but most people would not be able make an accurate judgment about the actual speed of the bicycle in miles per hour. Finally, the AASHTO Guide to the Development of Bicycle Facilities notes that “geometric design and traffic control devices can be used to reduce path users’ speed”, but “speed limit signs on paths may not be effective, as most bicyclists do not use speedometers.” (Guide to the Development of Bicycle Facilities page 141)

- Frustration from commuter cyclists and regular recreational riders.**
 Lexington has already experienced opposition from commuter cyclists in their pitch to implement a speed limit on their portion of the Bikeway. Alienating these users is counterproductive to town goals to encourage the use of environmentally sustainable transportation modes like bicycling. Bringing commuter cyclists into the conversation ensures that their concerns are heard and collective solutions are sought.
- There is no clear data or research that has been identified to justify trail speed limits.**
 This was a point made related to the Shining Sea Bikeway speed limit: the implementation of a speed limit was not based on data or research that indicated that a speed limit was necessary to prevent crashes. There appears to be little or no research nationally on the subject, and most justification for speed limits is to prevent conflicts between different travel modes. However, based on controversies with other trails, trail speed limits do not eliminate conflicts between users.
- It is unclear that a speed limit or recommendation will resolve behavioral issues like passing too close.**
 A speed limit can communicate that lower speeds are preferred on a trail. However, it does not communicate how a person should operate their bicycle or low-speed vehicle in relation to other users.
- Currently no townwide outreach has been conducted to get feedback on a proposed speed limit or other ways to reduce user conflicts.**
 As noted above, backlash from some user groups is likely if there is a not a thought-out public process for establishing a speed limit. Although ABAC has voted to support an advisory or non-regulatory speed limit, there has been no further public process to vet this issue. It should also be noted that other types of solutions to the issue of user conflicts could arise from a broader public process. A speed limit is one potential tool, but many other tools can and should be considered as well.

Recommendations

More public outreach and investigation needs to take place before a speed limit is implemented. DPCD has submitted an application for Community Preservation Act (CPA) funds to complete a Minuteman Bikeway planning study for Arlington. A part of that study can be to identify the main issues concerning Bikeway users and build support for countermeasures to address those issues. A speed limit could be one such measure considered through that public process. The Bikeway planning study is intended to have a robust public outreach component to it and could dig deeper into these issues.

If the Bikeway planning study does not get funded, the Town should still conduct public outreach on appropriate measures to address user conflicts on the Bikeway. DPCD could coordinate this effort in partnership with ABAC. This would be a much more limited scope than the intent of the proposed planning study.

Given the concerns about speed limits raised earlier in this memo, it may be more effective to install signage that speaks to the behavior of Bikeway users, not their speed (since speed is harder to enforce). Although a speed limit could be discussed as part of the public outreach, the benefits and challenges of this approach should be discussed transparently. Other tools and strategies could be utilized, such as: an automated speed radar board that lights up when a user goes over a certain speed, without showing the person what speed they are going; infrastructure improvements at major trail crossings and connections, such as “bicycle roundabouts” to slow down bicycle speeds at conflict areas; and more explicit separation of bicycles and pedestrians in different “lanes” where path widths allow. This is not an exhaustive list, as other options would need to be researched. The goal of these changes should be to balance the needs of all users without burdening one group with unreasonable or unrealistic expectations (for example, requiring bicyclists to dismount at certain locations is undesirable for a majority of users and will be frequently disobeyed).

Conclusion

The recommendation of DPCD is that a speed limit on the Minuteman Bikeway is not appropriate at this time. Further research and public outreach is necessary to get buy-in from the public and review other possible countermeasures to addressing issues surrounding conflicts between Bikeway users. This can be completed as part of the Minuteman Bikeway Planning Study that is proposed if funding is received through CPA. If the planning study is not selected for funding through CPA, DPCD staff can conduct public outreach specifically about issues of conflict between modes on the Bikeway.